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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,671	06/04/2007	Omer Einav	34644	4746

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MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

EXAMINER	
THANH, QUANG D	

ART UNIT	PAPER NUMBER
3771	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/597,671	EINAV ET AL.	
	Examiner	Art Unit	
	QUANG D. THANH	3771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-78* is/are pending in the application.

5a) Of the above claim(s) *38-78* is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-37* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I claims 1-11 and 37 in the reply filed on 7/12/11 is acknowledged. However, independent claim 12 of Group II has been amended to depend on independent claim 1 of Group I. Therefore, claims 1-37 are currently under examination.

2. Claims 38-78 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2,9, 31 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Re claim 2, there is no clear antecedent basis for "said ***motion*** mechanism"

6. Re claim 9, there is no clear antecedent basis for "said ***motion control*** mechanism"

7. Re claim 31, there is no clear antecedent basis for "said ***element***"

8. Re claim 32, there is no clear antecedent basis for "***element***"

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-16, 19-25, 27-30, 32-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reinkensmeyer (US 5,830,160).

11. Re claims 1 and 9-11, Reinkensmeyer discloses a rehabilitation device comprising: a frame 8/9 (fig. 2); an actuator 4 that includes a movement mechanism capable of applying a force that interacts with a motion of a patient's limb in a volume (fig. 1-2), in at least three degrees of freedom of motion of the actuator and capable of preventing substantial motion in any point in any direction in said volume (col. 4, line 60 to col. 5, line 12); a joint (fig. 2) interconnecting said frame and said actuator and allowing multiple different relative placements of said movement mechanism on said frame, such that said volume moves relative to said frame. Reinkensmeyer also discloses a method of setting up a rehabilitation system including an actuator 4 that includes a movement mechanism capable of applying a force that interacts with a motion of a patient's limb in a volume of at least 30 cm in diameter, in at least three degrees of freedom of motion of the actuator and capable of preventing substantial motion in any point in any direction in said volume, comprising: determining a rehabilitation exercise to be performed (step 156, fig. 10); selecting a desired position for said motion control mechanism for said exercise (step 124, fig. 7); and adjusting a

position of the mechanism on a frame according to said desired position and automatically adjusting said position (step 136, fig. 7); and automatically reporting to a user said desired position (fig. 6, col. 7, line 56 to col. 8, line 4).

Reinkensmeyer does not explicitly disclose that the movement mechanism is "capable of applying a force that interacts with a motion of a patient's limb in a volume of at least 30 cm in diameter". However, it would be obvious for one skill in the art to design the device such that it would be capable of applying a force that interacts with a motion of a patient's limb in a volume of at least 30 cm in diameter (such as the knee joint) in order to accommodate various types of exercise in different joints.

12. Re claims 2-8, Reinkensmeyer discloses that the motion mechanism has different motion limitations (brakes 52/64) in different spatial direction and wherein said multiple relative placements include changing an orientation of said mechanism; wherein said joint comprises a linear joint (arrow A, fig. 2); wherein said joint comprises a swiveling joint (arrow E, fig. 2); .wherein said frame is curved (fig. 2) ; wherein said joint is motorized (col. 6, lines 22-52); a controller 110 (fig. 1) that controls said joint according to an exercise stored in said controller to be performed (fig. 10); at least one sensor 60 that reports a position of said joint (col. 6, lines 22-32).

13. Re claims 12-16, 19-25 and 27-30, 32-37, Reinkensmeyer discloses the joint having has freedom of motion in Phi (rotation) and Theta (elevation) spherical angles (elevation angle and rotation, col. 5, line 62 to col. 6 line 52), and the device further comprising: a substantially rigid radial extension 40 (fig. 1-2) attached to said joint and adapted for movement with a limb of a person at at least one point thereof; and a

controller 110 adapted to control motion of said joint and thereby motion of said radial extension; wherein the radial extension is balanced such that said point remains stable if no force is applied and moves if force is applied by said person; wherein said balancing can be varied to match a weight 38 (fig. 1-2) of an attachment selectively attached to said extension; wherein said balancing can be varied by said controller along a path of motion to match a change in moment on said point; wherein said balancing can be set to provide a neutral buoyancy to said limb (col. 5, lines 39-53); wherein said controller comprises a mechanical controller or an electrical controller (fig. 6); at least one brake 52/64 (fig. 6) adapted to selectively resist said freedom motion; wherein said brake is continuously controlled by said controller (fig. 6); wherein said brake is uni-directional in only one of said Phi and Theta directions (fig. 6); wherein said brake is operative in both said Phi and said Theta directions (fig. 6); at least one motor 56 (fig. 3) adapted to move said joint; wherein said motor is continuously controlled by said controller (fig. 6); wherein said motor cannot be back-driven by said extension; comprising at least one resilient element 52 adapted to provide resilient compliance when said person moves said point in a trajectory other than a trajectory for which motion is controlled to move by said controller; wherein said controller sets a degree of said resilient compliance (fig. 6 and 7); wherein element includes a conduit 37 for electrical power (fig. 1); at least one position sensor 58 or 60 which reports on a angular position of said joint ; at least one force sensor 22 which reports on a force applied to said joint (col. 5, line 1-12). wherein said controller is configured to control said motion and provide at least one of assisting motion by said patient limb, resisting motion by

said patient limb, guiding motion by said patient limb, nudging said patient limb to move and moving said patient limb (see abstract); wherein said controllers stores (data storage 86, fig. 5) thereon a plurality of different rehabilitation exercises (fig. 11); and at least one weight 34 or 38 (col. 5, lines 39-53) that balances said actuator such that no force is required to maintain said actuator in space.

14. Reinkensmeyer does not explicitly disclose that the "freedom allowing positioning of said joint in substantially any angular position within a range of at least 30 degrees in each angular direction" and the motor "is adapted to apply at least 10 Kg of force at said point". However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to allow positioning of said joint in substantially any angular position within a range of at least 30 degrees in each angular direction and to apply at least 10 Kg of force, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

15. Claims 1-5, 12 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 5,755,645).

16. Re claims 1-5 and 12, 17-18, Miller discloses a rehabilitation device comprising: a frame 18 (fig. 1); an actuator that includes a movement mechanism T1/T2/T3 capable of applying a force that interacts with a motion of a patient's limb in a volume (along arrows D1,D2 and D3, fig. 1-2), in at least three degrees of freedom (col. 3, lines 32-39) of motion of the actuator and capable of preventing substantial motion in any point in

any direction in said volume (by means of brakes B1-B3); a joint 44/46/48 (fig. 1) interconnecting said frame and said actuator and allowing multiple different relative placements of said movement mechanism on said frame, such that said volume moves relative to said frame; the motion mechanism has different motion limitations (brakes B1-B3) in different spatial direction and wherein said multiple relative placements include changing an orientation of said mechanism; wherein said joint comprises a linear joint (arrow 105, fig. 1); wherein said joint comprises a swiveling joint (arrow 103, fig. 1); wherein said frame is curved (tubular frame 18, fig. 6) ; the joint having has freedom of motion in Phi (rotation, arrow 101, fig. 1) and Theta (elevation, arrow 103, fig. 1) spherical angles ; and the device further comprising: a substantially rigid radial extension 14 (fig. 1) attached to said joint and adapted for movement with a limb of a person at at least one point thereof; and a controller 110 (fig. 1) adapted to control motion of said joint and thereby motion of said radial extension; wherein said joint is a ball joint (shoulder joint 46); wherein said joint comprises two orthogonal hinges with a common center of rotation (best seen in fig. 1 and 2).

Miller does not explicitly disclose that the movement mechanism is “capable of applying a force that interacts with a motion of a patient's limb in a volume of at least 30 cm in diameter”. However, it would be obvious for one skill in the art to design the device such that it would be capable of applying a force that interacts with a motion of a patient's limb in a volume of at least 30 cm in diameter (such as the shoulder joint) in order to accommodate various types of exercise in different joints.

Miller does not explicitly disclose that the "freedom allowing positioning of said joint in substantially any angular position within a range of at least 30 degrees in each angular direction". However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to allow positioning of said joint in substantially any angular position within a range of at least 30 degrees in each angular direction, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Double Patenting

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 1-37 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-39 of U.S. Patent No. 8,012,107 in view of Reinkensmeyer and/or Miller et al. Claims 1-39 of U.S. Patent No. 8,012,107 in view of Reinkensmeyer and/or Miller et al (as discussed in the above rejections) disclose essentially all the claimed features.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to QUANG D. THANH whose telephone number is (571)272-4982. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on (571) 272-4835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/QUANG D THANH/
Primary Examiner, Art Unit 3771